

depositing by physical vapor deposition a barrier layer in said contact opening and on at least a portion of said semiconductor substrate, wherein said depositing said barrier layer includes depositing a titanium layer and depositing a titanium nitride layer on said titanium layer;

depositing a contact metal on said barrier layer within said contact opening;

removing a substantial portion of said contact metal and said barrier layer from said semiconductor substrate to form a contact plug within said contact opening, said plug extending to an uppermost surface of said substrate; and

subjecting said contact plug to a temperature sufficient to anneal said barrier layer.

(2) Kindly amend Claim 12 as follows:

12. (Three Times Amended) A process for fabricating an integrated circuit, comprising:

forming an active device on a semiconductor substrate;

forming a contact opening in a dielectric deposited on said active device, said contact opening in electrical contact with said active device;

depositing by physical vapor deposition a barrier layer in said contact opening and on at least a portion of said semiconductor substrate, wherein said depositing said barrier layer includes depositing a titanium layer and depositing a titanium nitride layer on said titanium layer;

depositing a contact metal on said barrier layer within said contact opening;

removing a substantial portion of said contact metal and said barrier layer from said semiconductor substrate to form a contact plug within said contact opening, said plug extending to an uppermost surface of said substrate; and

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amend
subjecting said contact plug to a temperature sufficient to anneal said barrier layer.

(3) Kindly amend Claim 24 as follows.

24. (Twice Amended) A process for fabricating a contact in a semiconductor substrate having a contact opening formed therein, comprising:

depositing a barrier layer in said contact opening and on at least a portion of said semiconductor substrate, wherein said depositing said barrier layer includes depositing a titanium layer and depositing a titanium nitride layer on said titanium layer;

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depositing a contact metal on said barrier layer within said contact opening;

removing a substantial portion of said contact metal and said barrier layer from said semiconductor substrate to form a contact plug within said contact opening, said plug extending to an uppermost surface of said substrate; and

subjecting said contact plug to a temperature sufficient to anneal said barrier layer.
